The Idaho National Engineering and Environmental Laboratory

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FY 1998 Technology Deployment in Environmental Management

Solutions of the Future at the INEEL

Site Technology Coordination Group
U.S. Department of Energy, Idaho Operations Office

INEEL

In Situ Beta Detector

Problem: Radiological characterization of the subsurface, including the vadose zone and groundwater is expensive and time consuming.

Baseline Technology: Conventional subsurface sampling methods require drilling and core retrieval, and/or pumping and containerizing of groundwater.

Innovative Technology: The INEEL developed In Situ Beta Detector allows the entire length of a borehole to be assessed near real-time for beta-emitting contamination; specifically gross beta, ^{90}Sr and ^{238}U.

Comparison: No actual samples are taken so analytical costs are significantly reduced, exposure is eliminated, and secondary waste streams are not generated. Measurements can be duplicated and repeated to help understand radionuclide migration.

Cost Savings: The In Situ Beta Detector has been used at various locations at the INEEL. Cost savings have not been quantified at this time.